

Research shows overall survival benefit for patients with Stage III soft tissue sarcomas

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Fox Chase Cancer Center researchers have carried out the first retrospective analysis of adjuvant chemotherapy's impact on overall survival in patients with stage III soft tissue sarcomas (STS), adjusted for socioeconomic status and other variables. The findings show that regardless of socioeconomic status and comorbidities, adjuvant chemotherapy improved survival by approximately 23 percent in stage III STS. Study leader Sujana Movva, MD, Medical Oncologist at Fox Chase, will present the findings the 50th Annual Meeting of the American Society of Clinical Oncology.

Previous meta-analyses have demonstrated that adjuvant [chemotherapy](#) confers a small absolute [survival benefit](#) to [patients](#) with STS, which arises in the tissues that support other parts of the body. Muscle, fat, blood vessels, nerves, tendons and the tissue surrounding joints are all soft tissues in which sarcomas can arise.

STS is uncommon but can be aggressive. About 12,000 people are diagnosed with STS in the United States every year, according to the National Cancer Institute, and stage III disease has a five-year survival rate of only 50 percent. Dr. Movva noted that medical oncologists across the United States treat these patients differently.

"We really wanted to show that for these aggressive sarcomas, which have a high likelihood of becoming metastatic disease, there's a high degree of variability for who gets adjuvant chemotherapy," she said.

Dr. Movva and her colleagues analyzed medical records of 12,198 individuals diagnosed with stage III STS between 1998 and 2010 from the National Cancer Data Base (NCDB), a collaboration between the Commission on Cancer of the American College of Surgeons and the American Cancer Society. They excluded patients who had not undergone surgery for primary tumor resection and those who had tumor histologies conventionally considered to be resistant to chemotherapy.

The NCDB, established in 1989, consolidates outcomes data from 29 million records—representing more than three-quarters of all newly diagnosed cancer cases—from cancer centers in the United States. Dr. Movva said the size of the database allowed her and her collaborators to gather enough data for a strong analysis.

"This is a lot more patients than we usually look at in sarcoma studies," she said. "Having 12,000 patients to look at is not a number we're used to."

Despite the potential benefits of adjuvant chemotherapy, she and her team found that only 29 percent of the high risk patients they studied had received the treatment. In both univariate and multivariate analyses, the Fox Chase team identified a variety of individual factors each associated with a higher likelihood of having been treated with chemotherapy. Patients who were younger than 40, were covered by private insurance, earned a higher income, had no comorbidities, had synovial histology or had tumors measuring more than 10 centimeters were more likely to have received chemotherapy.

Dr. Movva and her team found an overall survival benefit from chemotherapy. Before they adjusted for any variables, the median overall survival for patients treated with adjuvant chemotherapy was 83.9 months, compared to 48.5 months for patients not treated. Their adjusted analysis took into account 15 total different socioeconomic and

tumor factors, including race, age, comorbid conditions and insurance status. The adjusted benefit also showed a significant overall survival benefit (HR=0.77) associated with [adjuvant chemotherapy](#).

Dr. Movva noted that a previous, meta-analysis of all STS patient data estimated the absolute benefit of chemotherapy to be only about 6-11 percent depending on chemotherapy used. —Medical oncologists who treat their patients according to that estimate—especially those not in the sarcoma research community—may think that such a low benefit doesn't justify the use of chemotherapy.

However, "among stage III patients, there are some at very high risk for metastatic disease and who are also fit enough to benefit from chemotherapy," she said.

Dr. Movva thinks that the field is moving toward better identification of those high-risk patients most likely to respond to more aggressive treatment.

"I think the state of sarcoma research is very positive and encouraging," she said. "We have a larger understanding than we used to of how heterogeneous the disease is, and we are going to make significant strides in this disease over the next several years."

Provided by Fox Chase Cancer Center

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